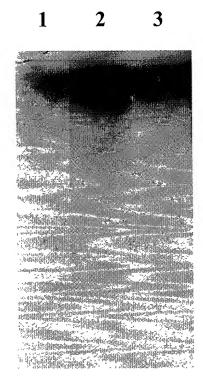
# FIG. 1

**1** Saline Control

PGF- $2\alpha - 1 \text{ hr } 10 \text{ mM sperm.}$ PGF- $2\alpha - 1 \text{ hr } 10 \text{ mM sperm.} + 5 \text{ hr } 1 \text{ mM sperm.}$ 



## FIG. 2

Control

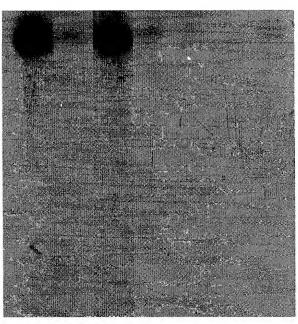
Control + Spermidine 2

 $PGF\text{-}2\alpha$  (1 h 35 m) + Spermidine PGF-2 $\alpha$  (1 h 35 m)

PGF-2 $\alpha$  (1 h 35 m) + Spermidine

PGF-2 $\alpha$  (3 h 45 m) + Spermidine

2 PGF-2 $\alpha$  (3 h 45 m) + Spermidine



S K T G K H G H A K V H L V G I D I F T G K K Y GAAGATATCTGCCCGTCGACTCATAACATGGATGTCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGC E D I C P S T H N M D V P N I K R N D F Q L I G ATCCAGGATGGGTACCTATCCCTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAGGGA I Q D G Y L S L L Q D S G E V R E D L R L P E G GACCTTGGCAAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCCATG D L G K E I E Q K Y D C G E E I L I T V L S A M ACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA**TAA**CTGGCTTCCAGGGTGGCGGTGGTGGCAGCA TEEAAVAIKAMAK  ${\tt TTTGACGTTTTATTTTGGTTTTCCTCACCCCTTCAAACTGTCGGGGAGACCCTGCCCTTCACCTAGCTCCCT}$  $\tt TGGCCAGGCATGAGGGAGCCATGGCCTTGGTGAAGCTACCTGCCTCTTCTCTCGCAGCCCTGATGGGGGAAA$  $\tt GGGAGTGGGTACTGCCTGTGGTTTAGGTTCCCCTCTCCCTTTTTCTTTTAATTCAATTTGGAATCAGAAAG$  $\tt CTGTGGATTCTGGCAAATGGTCTTGTGTCCTTTATCCCACTCAAACCCATCTGGTCCCTGTTCTCCATAGT$ TCTATAGGGGTGACAAGAAGAGGGGGGGGGGGGGGGGACACGATCCCTCCTCAGGCATCTGGGAAGGCCTTGC CCCCATGGGCTTTACCCTTTCCTGTGGGCTTTCTCCCTGACACATTTGTTAAAAATCAAACCTGAATAAAAC (972 NT, 109 aa)

(488 NT, 151 aa)

CA	GGI	CTA	GAG	TTG	GAA	TCG	AAG	CCT	CTT	AAA	ATC	GCA	GAT	GAT	'TTG	GAC	TTC	GAG.	ACA	GGA	GAT	GCA(	GGGG	
											M	A	D	D	L	D	F	Ε	$\mathbf{T}$	G	D	Α	G	13
CC	TCA	GCC	ACC	TTC	CCA	ATG	CAG	TGC	TCA	GCA	TTA	CGT	AAG	AAT	'GG'I	TTT	GTG	GTG	CTC	AAG	GGC	CGG	CCAT	144
A	S	A	T	F	P	M	Q	C	S	A	L	R	K	N	G	F	V	V	L	K	G	R	P	
GTAAGATCGTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGGT																								
С	K	I	V	E	M	S	T	S	K	T	G	K	H	G	H	Α	K	V	H	L	V	G	Ι	61
ATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGATGTCCCCAACATCAAAA										AAAA	288													
D	I	F	T	G	K	K	Y	E	D	I	С	P	S	$\mathbf{T}$	Η	N	M	D	V	P	N	Ι	K	
GGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCCCTGCTCCAGGACAGTGGGGAGGTACGAG																								
R	N	D	F	Q	L	I	G	I	Q	D	G	Y	L	S	L	L	Q	D	S	G	E	V	R	109
${\tt AGGACCTTCGTCTGGCGGGGGGGGGCCTTGGCAGGGGGGGG$											ATCC	432												
E	D	L	R	L	P	E	G	D	L	G	K	E	I	E	Q	K	Y	D	C	G	E	E	I	
TG	ATC	ACA	GTG	CTG	TCC	:GCC	ATG	ACA	GAG	GAG	GCZ	AGCT	GTT	GCA	ATC	AAG	GCC	ATG	GCA	AAA	TAA	CTG	GCTT	
L	Ι	$\mathbf{T}$	V	L	S	A	M	${f T}$	E	E	Α	Α	V	Α	I	K	Α	M	Α	K	*			154
CC	AGG	GTO	GCG	GTG	GTC	GCA	GCA	GTG	ATC	CAI	GAC	CCT	ACA	GAC	GCC	CCT	'CCC	CCA!	GCT	CTG	GCT	GGG	CCCT	576
TG	GCT	GGA	CTC	CTA	TCC	LAA!	TTA	TTT	GAC	GTT	TTP	TTT	TGG	TTT	TCC	TCA	'GGC	CTT	CAA	ACT	GTC	GGG	GAGA	
CC	CTC	CCC	TTC	ACC	TAC	CTC	CCT	TGG	CCA	GGC	CATO	BAGG	GAG	CCA	TGG	CCI	TGG	TGA	AGC	TAC	CTG	CCT	CTTC	720
TC	TCC	CAC	CCC	TGA	TGG	GGG	AAA	GGG	AGT	GGG	TAC	CTGC	CTG	TGG	TTT	AGG	TTC	CCC	TCT	CCC	TTT	TTC	TTTT	
TP	CTA	CAP	TTT	'GGA	ATC	AGA	AAG	CTG	TGG	TTA	CTC	GCA	PAA	GGI	CTT	GTG	TCC	TTT	ATC	CCA	CTC	AAA	CCCA	864
TC	TGC	TCC	CCT	GTT	CTC	CAT	'AGT	CCT	TCA	.CCC	CCCF	AGC	ACC	ACI	GAC	CAGA	CTG	lGGG	ACC	AGC	:CCC	CTT	CCCT	
GC	CTC	TGT	CTC	TTC	CCA	AAC	CCC	TCT	ATA	GGG	GTC	ACA	AGA	AGA	\GG/	AGGG	GGG	GAG	GGG	ACA	CGA	TCC	CTCC	1008
TC	:AGC	CAT	CTG	GGA	AGG	CCT	TGC	CCC	CAT	'GGC	GCTT	CTAC	CCI	TTC	CTC	TGC	GCT	TTC	TCC	CTG	ACA	CAT	TTGT	
TP	AAZ	ATC	'AAA	CCI	'GAA	TAA	AAC	TAC	AAG	TTT	CAAT	CATG	AAA	AAA	AAA	AAA	AAA	AAA	AAA					1139

(1139 NT, 154 aa)

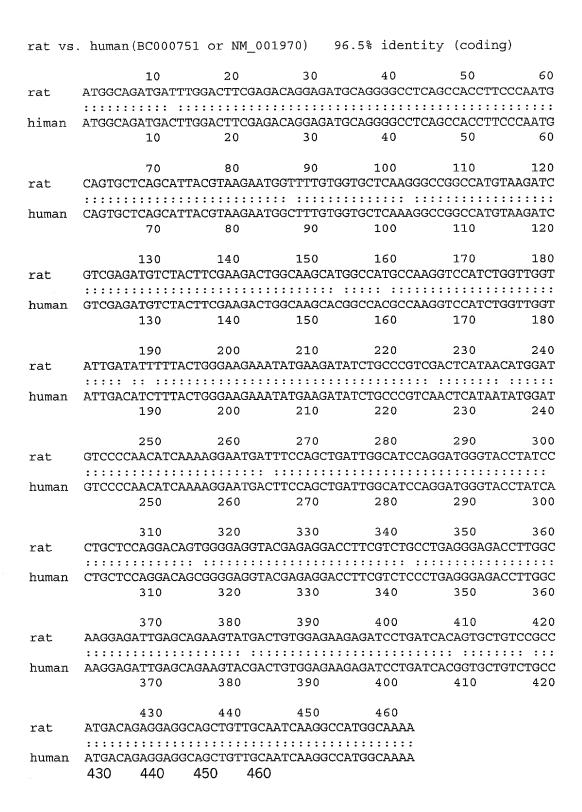


Figure 6

rat vs. human (NM 020390) 72.5% identity (coding) ATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGGCCTCAGCCACCTTCCCAATG rat ::::::: :: :: ::: :: ::::::: ::::: :: ::: : ::: ::: human ATGGCAGACGAAATTGATTTCACTACTGGAGATGCCGGGGCTTCCAGCACTTACCCTATG rat CAGTGCTCGGCCTTGCGCAAAAACGGCTTCGTGGTGCTCAAAGGACGACCATGCAAAATA human rat GTGGAGATGTCAACTTCCAAAACTGGAAAGCATGGTCATGCCAAGGTTCACCTTGTTGGA human ATTGATATTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGAT rat ATTGATATTTTCACGGGCAAAAAATATGAAGATATTTGTCCTTCTACTCACAACATGGAT human GTCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCC rat :: :: :: :: :: :: :::::: :: :::::: :::: :: ::::: ::::: ::: GTTCCAAATATTAAGAGAAATGATTATCAACTGATATGCATTCAAGATGGTTACCTTTCC CTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAGGGAGACCTTGGC rat ::::: :: :: :: :: :: : ::: :: :: :: :::::: CTGCTGACAGAAACTGGTGAAGTTCGTGAGGATCTTAAACTGCCAGAAGGTGAACTAGGC human AAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCC rat :: :: : :: ::::: : : : : : ::: human ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA rat ::::: :: :: :: :: :: ATGAGTGAAGAATATGCTGTAGCCATAAAACCCT--GCAAAT human 

Figure 7

rat vs. mouse (BC003889) 98.3% identity (coding)

	10	20	30	40	50	60							
rat	ATGGCAGATGATTT				•								
Iuc	:::::::::::::::::::::::::::::::::::::::			::::::::									
mouse	ATGGCAGATGATTT	GGACTTCGAG	ACAGGAGATG	CAGGGGCCTC	AGCCACCTTC	CCAATG							
	10	20	30	40	50	60							
	70	80	90	100	110	120							
rat	CAGTGCTCAGCATT				CCGGCCATGI	CAAGATC							
	:::::::::::::::::::::::::::::::::::::::				:::::::::								
mouse (	CAGTGCTCAGCATTA				CGGCCATGTA	AGATC 120							
	70	80	90	100	110	120							
	130	140	150	160	170	180							
rat													
Iac	rat GTCGAGATGTCTACTTCGAAGACTGGCAAGCATGGCCATGCCAAGGTCCATCTGGTTGG												
mouse	GTCGAGATGTCTAC												
	130	140	150	160	170	180							
	190	200	210	220	230	240							
rat	ATTGATATTTTTAC	TGGGAAGAAA	TATGAAGATA	TCTGCCCGTC	GACTCATAAC	CATGGAT							
	::::: ::::::::::::::::::::::::::::::::												
mouse		TGGGAAGAAA 200	TATGAAGATA 210	220	230	240							
	190	200	210	220	250	240							
	250	260	270	280	290	300							
rat	GTCCCCAACATCAA			TTGGCATCC	GGATGGGTA	CCTATCC							
	:::::::::::::::::::::::::::::::::::::::												
mouse	GTCCCCAACATCAA	ACGGAATGAC	TTCCAGCTGA	ATTGGCATCC	AGGATGGGTA	CCTATCC							
	250	260	270	280	290	300							
	310	320	330	340	350	360							
rat	CTGCTCCAGGACAG					:::::::							
mouse	::::::::::::::::::::::::::::::::::::::												
mouse	310	320	330	340	350	360							
	320	4_1											
	370	380	390	400	410	420							
rat	AAGGAGATTGAGCA	GAAGTATGAC	TGTGGAGAAC	GAGATCCTGAT	CACAGTGCT	GTCCGCC							
	:::::::::::::::::::::::::::::::::::::::		::::::::	: : : : : : : : : :	::::::::	::: :::							
mouse	AAGGAGATTGAGCA												
	370	380	390	400	410	420							
	420	4.4.0	450	460									
rat	430 ATGACAGAGGAGG	440 'accrettee											
rat	AIGACAGAGGAGG												
mouse	ATGACAGAGGAGG												
	430	440	450	460									

Figure 8

rat vs.	human (BC000751	or NM_00	1970) 10	0.0% ident	ity								
	10	20	30	40	50	60							
rat	MADDLDFETGDAGAS	ATFPMQCSA	ALRKNGFVVLK	GRPCKIVEMS	TSKTGKHGHA	\KVHLVG							
_	:::::::::::::::::::::::::::::::::::::::	::::::::	::::::::::	::::::::::		::::::							
human	MADDLDFETGDAGAS	ATFPMQCSA	ALRKNGFVVLK	GRPCKIVEMS	TSKTGKHGH <i>A</i>	4KVHLVG							
	10	20	30	40	50	60							
	70	80	90	100	110	120							
rat	IDIFTGKKYEDICPS	THNMDVPNI	KRNDFQLIGI	QDGYLSLLQD	SGEVREDLRI	JPEGDLG							
	:::::::::::::::	::::::::		::::::::	:::::::::	::::::							
human	IDIFTGKKYEDICPS	THNMDVPNI	KRNDFQLIGI	QDGYLSLLQD	SGEVREDLRI	_PEGDLG							
	70	80	90	100	110	120							
	130	140	150										
				_									
rat	KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK												
	:::::::::::::::::::::::::::::::::::::::												
human	KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK												
	130	140	150										

rat vs. human(NM\_020390) 82.5% identity  ${\tt MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG}$ rat human MADEIDFTTGDAGASSTYPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG rat human IDIFTGKKYEDICPSTHNMDVPNIKRNDYQLICIQDGYLSLLTETGEVREDLKLPEGELG KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK rat :::: ::. ::.. ..:. ::.:: human KEIEGKYNAGEDVQVSVMCAMSEEYAVAIKP-CK 

MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG rat MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG mouse IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG rat IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG mouse KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK rat KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK mouse 

rat vs. mouse (BC003889)100.0% identity

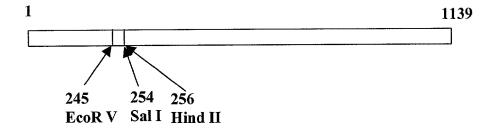


Figure 12

### Southern Blot of Rat Genomic DNA

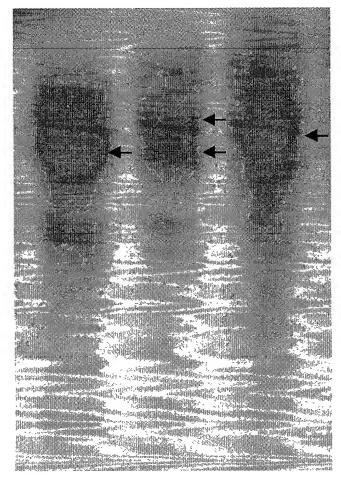
EcoRV

Rat eIF-5A 1139 bp

#### EcoR1 EcoRV BamH1

Full-length rat eIF-5A cDNA probe

FIG. 13



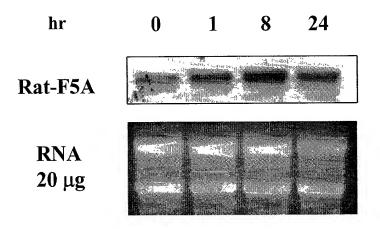


Figure 14

GCTGTGTATTATTGGGCCCATAAGAACCACATACCTGTGCTGAGTCCTGCACTCACAGACGGCTCACTGGGT A V Y Y W A H K N H I P V L S P A L T D G S L G GACATGATCTTTTCCATTCCTATAAAAACCCAGGCTTGGTCCTGGACATCGTTGAAGACCTGCGGCTCATC D M I F F H S Y K N P G L V L D I V E D L R L I N M Q A I F A K R T G M I I L G G G V V K H H I GCCAATGCTAACCTCATGCGGAATGGAGCTGACTACGCTGTTTATATCAACACAGCCCAGGAGTTTGATGGC A N A N L M R N G A D Y A V Y I N T A Q E F D G S D S G A R P D E A V S W G K I R M D A Q P V K GTCTATGCTGATGCATCTCTGGTTTTCCCCTTGCTGGTGGCTGAGACATTCGCCCAAAAGGCAGATGCCTTC V Y A D A S L V F P L L V A E T F A Q K A D A F  ${\tt AGAGCTGAGAAGAATGAGGAC{\it TGA}GCAGATGGG{\it TAAAGACGGAGGCT{\it TCTGCCACACCT{\it TTATT{\it TTTTT{\it TTTTT}}}}$ RAEKNED GCATACCAACCCCTCCTGGGCCCTCTCCTTGGTCAGCAGCATCTTGAGAATAAATGGCCTTTTTGTTGGTTT CTGTAAAAAAAGGACTTTAAAAAAAAAAAAA

(606 NT, 151 aa)

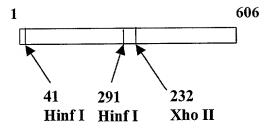


Figure 16

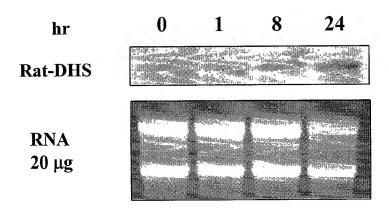


Figure 17

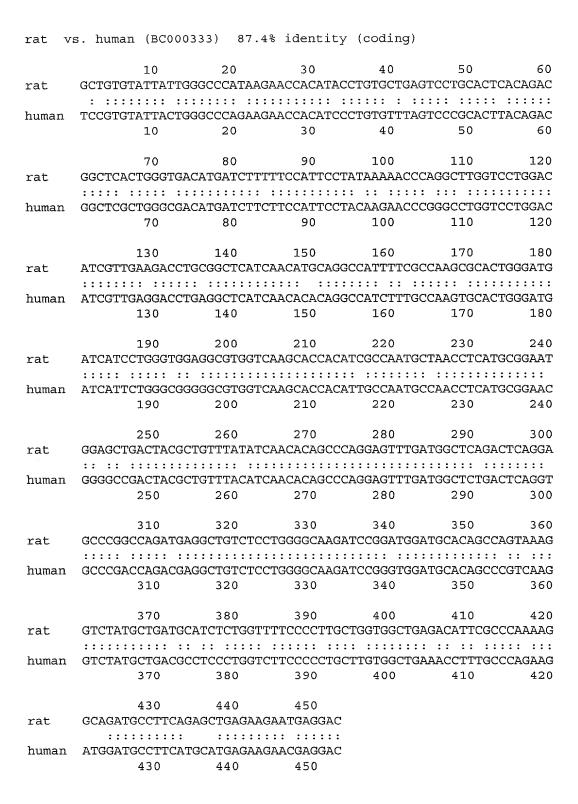
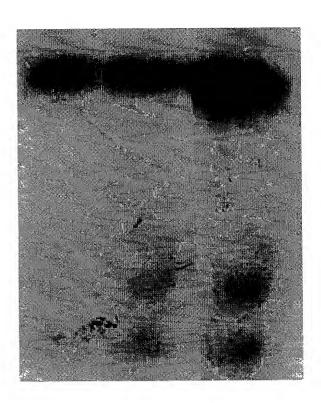


Figure 18

## FIG. 19

## Hours After PGF-2a Treatment

0 1 24



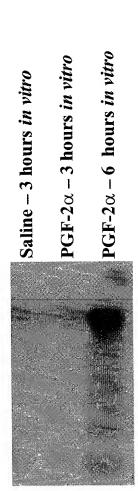


Figure 20

FIG. 21

### Southern Blot of Rat Genomic DNA

Partial rat DHS cDNA probe

